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ABSTRACT

Demographic, economic, and social trends were examined in order to assist the 2005 Task Force of the Chancellor's Consultation Council develop strategies to address expected changes California will undergo between 1997 and 2005. Arranged by five categories, the trends most important to community colleges appeared to be: (1) demographic: emerging 'baby-boomer echo' of 18-24 year olds, increasing cultural and learning diversity of students, and the elderly education market; (2) technological: advances in new interactive communications and fused systems, increasing use of computers and the need for higher skills in most jobs, and increasing "virtuality"; (3) economic: trends, longer and shallower cycles, increased outsourcing, career changes, and globalization; (4) societal: the advent of a multicultural, mosaic society, increased cocooning and living alone and the changing structure of the family; and (5) public policy: decreasing federal/increasing state control, continued inadequate funding, and an emerging gap between existing practices and new paradigms of college organization and delivery. Highlighting these trends are the increase in student diversity that colleges face, the increasingly pervasive influence of technology, continued expansion in the perceived mission of the colleges, and the substantial differences between the current practice and that advocated by planners. Contains 63 references. (YKH)

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Trends Important to California Community Colleges

A Technical Paper for the 2005 Task Force of the Chancellor's Consultation Council

November 1997

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A Technical Paper for the 2005 Task Force of the Chancellor's Consultation Council

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Summary

Trends Important to California Community Colleges is one of four technical papers prepared for use by the 2005 Task Force of the Chancellor's Consultation Council. This task force was formed in Spring 1997 and asked to help the Board of Governors and Chancellor develop strategies for addressing the challenges of the future facing California Community Colleges. The other technical papers in this series include: *Access, Funding Patterns,* and *Future Scenarios.*

This *Trends* paper builds on the results of earlier futures research projects undertaken by staff for the Board of Governors and on work by staff sponsored by the American Association of Community Colleges. This material was first discussed by the Board of Governors at its February 1997 Retreat.

These trends and their implications are a helpful context for discussions which start at an aggregate level, but lead to more detailed questions and analyses. For instance, discussions of demography and the economy lead to analysis of the appropriate community college contribution to the workforce preparation of immigrants and to the colleges' assistance with welfare reform. Another line of inquiry, implied by changing technology, is the need to develop plausible projections of how the use of instructional technologies will (should) impact the planning and funding of community college capital outlays.

To summarize, the trends most important to community colleges appear to be:

- ***Demographics***: emerging "baby-boomer echo" of 18-24 year-olds; increasing cultural and learning diversity of students; and the elderly education market.
- ***Technology***: advances in interactive communications and fused systems; increasing use of computers and the need for higher skills in most jobs; and increasing "virtuality" (decreasing reality?).
- ***Economy***: longer and shallower cycles; increased outsourcing, career changes, and networking; and globalization.
- ***Society***: advent of multicultural, mosaic society; increased cocooning and living alone; and changing structure of family.
- ***Public Policy***: decreasing federal (increasing state) control; continued inadequate funding; and an emerging gap between existing practice and new paradigms of college organization and delivery.

Highlighting this work are (1) the extraordinary increase in *student diversity* the colleges face, (2) the increasingly pervasive *influence of technology*, (3) continued *expansion in* the perceived *mission* of the colleges, and (4) the substantial *differences* between the current practice and that advocated by planners.

Introduction

Trends Important to California Community Colleges is one of four technical papers prepared for the 2005 Task Force of the Chancellor's Consultation Council. This task force was formed in Spring 1997 and asked to help the Board of Governors and Chancellor develop strategies for addressing the challenges of the future facing the California Community Colleges. The other technical papers in this series:

- *Access*
- *Funding Patterns*
- *Future Scenarios*

This *Trends* paper builds on the results of a futures research project that was conducted to help develop a long range plan for the California Community College Board of Governors, *The New Basic Agenda: Policy Directions for Student Success*, adopted in March 1996. Results of that project were initially modified by the author for a Research White Paper, sponsored by the American Association of Community Colleges, for publication in 1997. That material was revised further for Board of Governors discussions that began at a February 1997 Retreat.

To provide context for this discussion, we note that the California Community Colleges Board of Governors (BOG) is a 16-member statewide group, appointed by the State's Governor, which has broad leadership and regulatory responsibilities for 71 districts and 106 local community colleges, 46 centers, and hundreds of outreach locations across California. Each of the 71 districts has a five- or seven-person, locally-elected board that oversees work of that district.

Like many states, the responsibility for governing California community colleges is shared between state and local authorities. For instance, the state-level BOG adopts minimum qualifications for faculty hiring, but local boards (or their designees) hire faculty, chief executive officers, and other staff. College governance is shared also—between trustees, administration, faculty, and students—at both local and state levels. Locally, college faculty senates are part of college and district decisionmaking, along with the district board and chief executive officer. At the state level, policymaking is guided by a "consultation process" in which all constituents (trustees, administration, faculty, and students) participate. While the BOG engages in statewide planning, each local district also plans for its own colleges and service area. The BOG provides regional coordination of these local plans.

Methodology

This project relies on "futures research" techniques, commonly used by colleges and universities; see, for example, Morrison, Renfro, and Boucher (1984) and McIntyre (1991). In "futures research," staff gather information from a wide variety of sources on trends both internal and external to the college, an effort often called an "environmental scan;" then they subject that information to rigorous analysis and consensus-building. In this working paper, trends are organized into the following categories:

- *Demography*: Most certain of the trends. Apart from uncertainty of policies about immigrants, most individuals that colleges plan to teach over the next decade already reside in their areas.
- *Technology*: Changing ever more rapidly as time goes by. Yet, basic developments that indicate what and how colleges should teach are broadly predictable.
- *Economy*. Economic cycles are difficult to forecast, and few agents do so for more than one or two years into the future. The cycle is of key importance to the demand for and funding of colleges.
- *Society*. Equally difficult to forecast and increasingly diverse are changes that will take place in family formation, values, and lifestyles. These factors impact how (well) individuals learn.
- *Public Policy*. Most difficult to predict, particularly in states, like California, that have a strong initiative process and term-limits. Colleges are impacted by all kinds of policies, not just those about education.

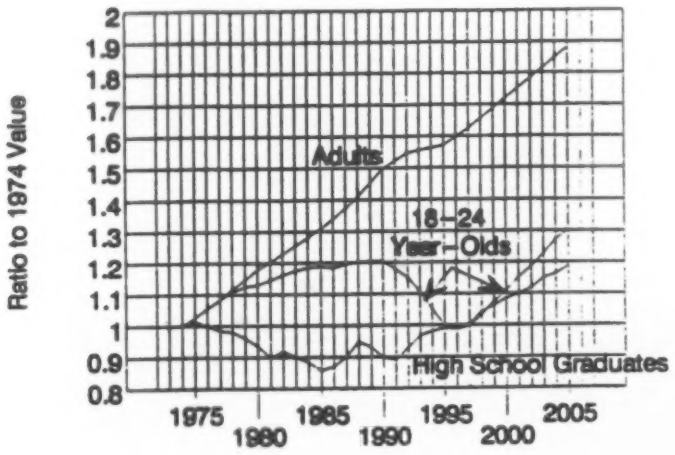
The use of these particular categories is based on planning experience with the Board of Governors. To identify some specific future planning scenarios, staff prepared its own forecasts and used results from other models, such as work by the Rand Corporation (1995), UCLA (1995), California State Department of Finance (1996), and the Center for the Continuing Study of the California Economy (1995, 1996, and 1997). These forecasts all differ and our use reflects the ranges represented.

The following presents the results of our initial research on trends important to California Community Colleges; their implications for policy and practice; and a further analysis of how national trend(s) may differ.

Demography

California. Following decades of rapid growth, California's population increase slowed because of the recent recession (Figure 1), but growth continues, and the number of 18-24 year-olds—after nearly a decade of decline—will increase rapidly beginning 1997. (The number of high school graduates has already started to increase.) Known as the "baby-boom echo," this age cohort comprises half of community colleges' enrollments. The state's elderly population also will grow: those over 55 years-of-age will increase by 31 percent during the next decade, compared to 14 percent for all other age groups.

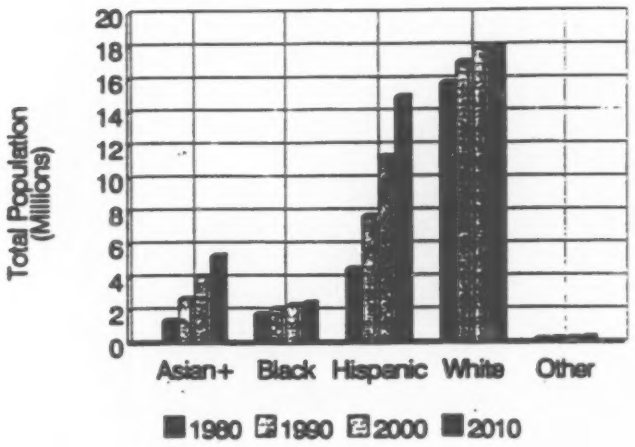
Figure 1
California Demographic Trends
1974-94 Actual; 1995-2005 Forecast



Sources: Derived from Department of Finance, 1996;
California Postsecondary Education Commission, 1995.

The multicultural character of California is changing toward that of Hawaii. In 1990, two of every five Californians were Hispanic, Asian or Black—compared to one in every five throughout the rest of the U.S. (Figure 2). By 2002, half of California's population will be from a non-white background—thirty percent will be Hispanic—and most of the new residents will be either Hispanic or Asian (Figure 2). Currently, a language other than English is spoken in half of the households in Los Angeles County, and more than 100 different languages are spoken across the state. If current policies continue, the early half of the added population between now and 2005 throughout California will be foreign immigrants.

Figure 2
California Racial and Ethnic Groups
1980, 1990 Actual; 2000, 2010 Forecast



Note: Asian+ includes Asian and Pacific Islanders.
Source: Derived from Center for Continuing Study of the California Economy; California Population Characteristics, 1995.

California's labor force is changing dramatically. Today, three of every ten workers in the state are white males. By contrast, just one of every 15 net additions to the state's work force (new workers less retirees and deaths) during the next ten years will be white male. Of the other new workers, over half will be women, and many new workers will be recent immigrants who have entered the state during this decade and have limited English-speaking skills and may not be highly trained for jobs. An additional indeterminate number of new Californians will be undocumented immigrants.

California community college enrollment changes reflect the state's changing population:

Enrollment	Fall 1983	Fall 1994
NonWhite	39%	51%
NonCitizen	9%	20%

During the same period, community colleges have enrolled those mostly in lower socioeconomic groups:

	1992 Annual Family Income
California Community Colleges students	**$23,900**
California State University students	32,800
University of California students	48,800
All Californians generally	**37,600**

Four of five community college students work, and in the face of fee increases they tend to carry fewer classes and work even more; see Chancellor's Office (1993). While nearly two of every three students would qualify for student financial aid, only one of every three applies. And one of every 10 students receives welfare payments. (One of every five California adult welfare recipients attends a community college.)

National. During the next decade, California's population will grow by 15 percent, nearly twice the national rate (9 percent). While 9 of 10 new Californians will be non-white, that same ratio for population growth nationwide is 7 of 10. And, over the next decade, all states will be subject to the same increases in the elderly, and to the 18-24 year-old increase.

Implications. Many of California's and the nation's new workers will come from population groups that have been underrepresented in postsecondary education. Improving access of these new workers to education is especially important for community colleges, because most of these individuals begin their postsecondary education in a community college. The increased variety of learning styles of a more culturally-diverse clientele also will pose significant challenges to the nation's community colleges.

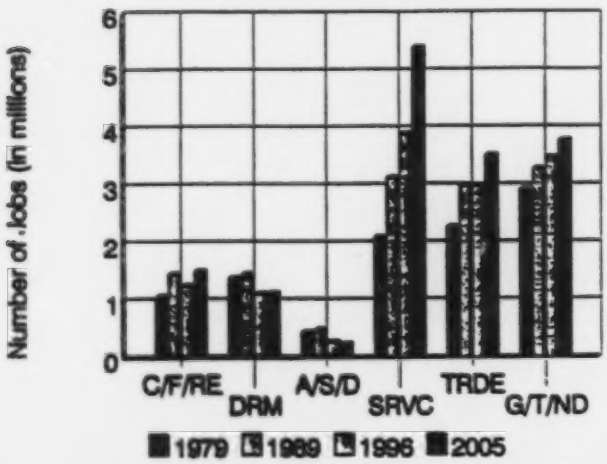
In California and other sun belt states, large numbers of limited-English speakers will continue to require classes in English as a Second Language (ESL) and in precollegiate basic skills. A contrasting impact on curriculum and its delivery will result from the upcoming surge in high school graduates and 18 to 24 year-olds: increases in demand for transfer programs and, specifically, for lower division general education.

Technology

Technological change poses two major implications for community colleges: (1) the need to teach students about the technologies with which they will work after completing their education, and (2) the increasing opportunity that colleges have to teach students using many of these same technologies.

California. Technological change demands increasingly higher overall skills from the labor force, but it isn't clear just what kinds of new technologies, or new skills, will be required. Like other states, California's economy is shifting from manufacturing to services, from an industry-based economy to a knowledge-based economy. In the recent recession (like earlier recessions), construction, real estate and finance were hard hit, and are expected to rebound during economic recovery (Figure 3). But, unlike earlier recessions, aerospace and defense-related industries lost many middle and upper-level positions, few of which will return. Foreign trade and high technology lead the recovery. And, while durable manufacturing is beginning to recover in California, it isn't clear to what degree and in which areas. Communications and information processing technologies will grow; services will grow and manufacturing decline.

Figure 3
California Jobs by Industry
1979, 1989, 1996 Actual; 2005 Forecast



Sources: California Employment Development Department, 1996;
Center for the Continuing Study of the California Economy, 1995.

Industry Legend:

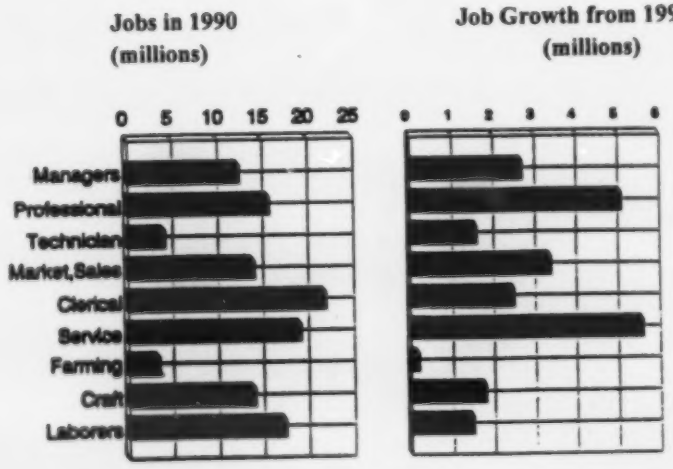
C/F/RE:	Construction, Finance, and Real Estate
DRM:	Durable Manufacturing
A/S/D:	Aircraft, Space, Defense
SRVC:	Service
TRDE:	Trade
G/T/ND:	Government, Transportation, Nondurable Manufacturing

As the California economy grows and changes from manufacturing to services, several sectors can be identified to be of major importance and suggest specific ways in which the job market will change. Foreign trade (particularly around the Pacific Rim), high technology manufacturing, professional services, and tourism and entertainment will push the state's growth. The number of jobs in computer services, pharmaceuticals, publishing, and motion pictures will continue to increase, while jobs in metal products, aerospace, aircraft, and defense will continue to decrease in California. And computers will be used in most jobs.

National: At present, more people in the nation assemble computers than cars, and there are more Americans in the software industry than in the oil industry (Paine, 1996). As the infrastructure of the "information superhighway" is established, media are beginning to be "fused" and radio, television, computer, fax, printer, etc. will soon coexist in a single box. Dede (1995) predicts this will be the prevalent model within two decades.

During the next decade, jobs requiring some postsecondary education—executive, managerial, professional, technical, and marketing and sales—will increase more than average, while jobs requiring little or no postsecondary education—clerical, farm labor, crafts, operators, and general laborers—will grow at less-than-average rates (Figure 4). While each state's industrial profile differs, this overall pattern of job growth will be similar throughout the nation.

Figure 4
U.S. Jobs and Job Growth
1990 to 2005



Sources: Center for the Continuing Study of the California Economy, California Population Characteristics, 1992.

Implications: Largely because of technological advance, the percentage of unskilled jobs in the nation has dropped from 60 percent (1950) to 35 percent (1990) and is forecast at 15 percent by 2000. Consequently, Roe (1996) argues that there will be more need for "techno-professionals," trained at less-than baccalaureate levels—by community colleges—in general skills like teamwork, critical thinking, computers and communications, along with more technical skills like biotechnology, environment, electronics, information, and manufacturing. Community colleges are challenged to properly plan and implement the curriculum needed by workers in the face of this dramatically changing labor market.

Technological change also means that individuals will change careers or their basic job skills as many as a half-dozen times or more during their lifetime. Thus, their retraining needs for community college education, already substantial, will continue to increase. Of the more than half-million California community college students enrolled for job training at any given time, about one-third are retraining for a different skill or career. (Prior to 1993, one of every ten California community college students already held baccalaureate degrees, and two of every three of these students were enrolled to learn job skills.)

Advances in information technology provide community colleges the opportunity to accomplish a number of objectives, among which are to improve student learning, increase access, and, possibly, reduce costs. The models for doing this are generally well known, though the ultimate technology may not be:

(a) use of multimedia by faculty to complement traditional lecture and/or laboratory delivery;

(b) simultaneous audio and/or video interaction by faculty and students who are physically separated;

(c) delayed interaction at a distance, through computer-assisted instruction (CAI) and other tools; and

(d) passive distance learning methods such as one-way television, audio/video, correspondence, and the like.

Methods (c) and (d) have been available for many years, as have (a) and (b), but advances in multimedia and interactive tools make them much more widely available for use.

Of major issues about using technology to teach, perhaps the most important deals with the quality of student learning. How can distance learning be made effective if research shows that students learn better when they work in a performance-oriented, "hands-on" environment, and when they work collaboratively—in groups—rather than competitively—in isolation? Can instructional technology improve access for community college students from low income situations who have little experience with computers and telecommunications? How can tenured senior faculty be effectively combined with temporary faculty and technicians to deliver instruction using technology? How much courseware will be developed on-campus in contrast to being pur-

chased elsewhere? How do colleges fund the initial costs of hardware, software, and communication systems when the savings (if any) occur later?

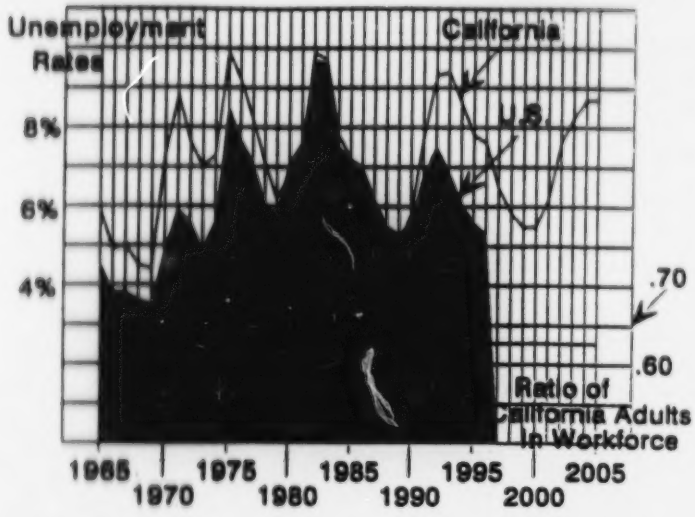
Many other agents offer training in the same skills and knowledges as do the community colleges. The number of competitors for community colleges—in the postsecondary education marketplace—will increase. These competitors will take classes to students in their homes or workplace, or at other convenient sites, often using advanced technologies. Motorola, Mind Expansion (MEU), and Phoenix Universities, and public television are already well into niches of this market. In addition, Western Governors (formerly Virtual) University, International Community College (made up of MEU, the League for Innovation, and Jones Education Networks), and other emerging institutions (like California Virtual University) and consortia will offer instruction similar to that offered by community colleges.

Economy

California and the Nation: The State's economic recovery which began in 1994—fully one year after the national recovery—has been less robust than the prior three recoveries and has been weaker than that of the nation as a whole (Figure 5). Moreover, the proportion of adults officially in California's labor force has dropped from 69 percent in 1990 to 65 percent now. If this proportion had not changed, unemployment in California would be 12 percent, rather than the 7 percent officially estimated, which also is higher than the 5.4 percent national figure. (The Field Research Corporation [1996] has estimated that 20 percent of California adults are seeking employment.) These are major changes. During the 1980s, California's economy cycled in phase with that of the nation, had similar unemployment, and higher (than current) labor force participation. And California's (and the nation's) economic cycles have lengthened over the past quarter century.

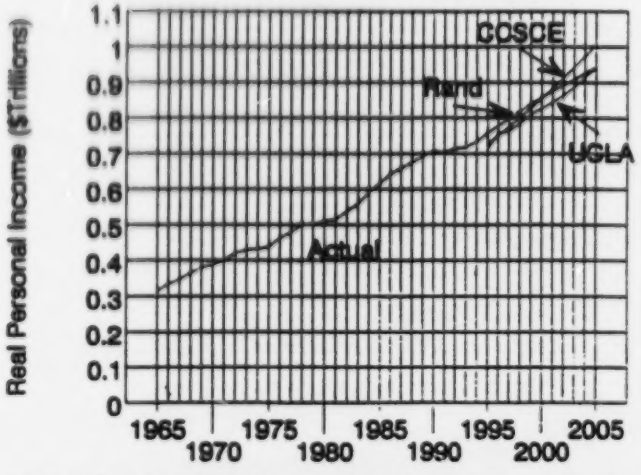
Despite the recent slowing of national and global economic indicators, California's recovery continues and becomes more robust. Three forecasts for the next decade—by the Rand Corporation, the UCLA Business Forecast, and the Center for the Continuing Study of the California Economy (CCSCE)—project annual growth rates in real (price-adjusted) personal income: 2.2 percent, 2.8 percent and 3.3 percent, respectively, that range around the state's 3 percent annual average growth rate for the past 30 years (Figure 6). The California Governor's last published long term forecast (1995) projects the state's growth—in real personal income—at 2.8 percent annually over the next decade, marginally better than the national growth forecast of 2.5 percent. Notably, all projections embody a more modest rate of inflation in the future—between 3 percent and 4 percent annually—than occurred during in the past 30-years (>5 percent).

Figure 5
Employment and Workforce
1972-1995 Actual; 1996-2005 Estimated



Sources: Chancellor's Office, California Community Colleges, August 1996. Derived from California Employment Development Department, 1996, 1989; and California State Department of Finance, 1996.

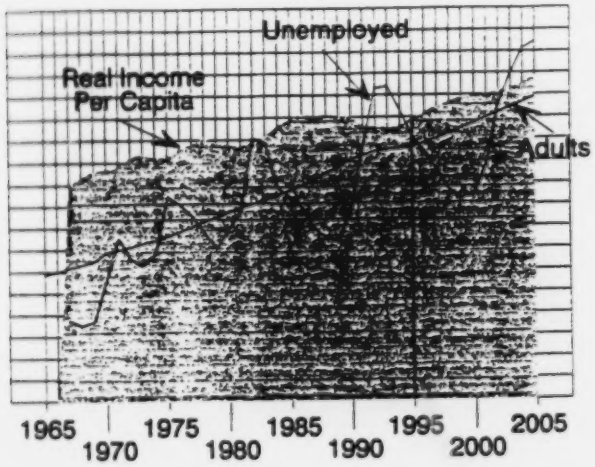
Figure 6
California Personal Income
1965-1994 Actual; 1995-2005 Estimated



Sources: Derived from California Governor's Budget Summary, 1995-96. UCLA Business Forecast, December 1994. Rand Corporation, the California Master Plan Revisited, DRAFT, January 1995. Center for the Continuing Study of the California Economy (CCSCE), California Economic Growth, 1994.

The Governor (in his 1995 Economic Report) also assumed ". . . A recession at some point in the late 1990s. . ." followed by ". . . A normal cyclical upturn early in the period 2000-2005." Similarly, we assume an interruption of California's recovery by 2000, also followed by another upturn between 2000 and 2005, projecting cycles of recovery and recession that are somewhat longer and less severe than in the past, together with modest price inflation, averaging about three percent annually (Figure 7). Patterns of unemployment are assumed to cycle in the same way as they have in the past.

Figure 7
California Economic Trends
1965-1995 Actual; 1996-2005 Estimated



Sources: California Employment Development Department, August 1996; Department of Finance, August 1996; California Governor's Budget Summary, 1996-97; Economic Report of the Governor, 1995.

While moving from an industrial- to a knowledge-basis, firms are becoming more productive, largely in response to international competition and technological change. They are "downsizing;" out-sourcing (contracting for services, rather than using their "own" employees); entering into often-temporary partnerships, alliances, and collaborations; shifting to horizontal (team-based), rather than vertical, organization; and generally putting greater emphasis on specific customer wants.

Among corporate changes, perhaps the most dramatic are in the health industry. The shifts from fee for service to capitation, individual practice to managed care, in-patient to out-patient care, and increasing use of paraprofessionals and multi-skilled

workers all have significant implications for who, what, and how community colleges teach and how the colleges coordinate their instructional delivery with rapidly changing health care organizations.

Corporate outsourcing is part of another development, the "network" society, that is beginning to emerge in California and elsewhere: where more highly skilled workers, particularly those trained in postsecondary education, are becoming independent contractors (not traditional "employees"), and where more and smaller firms use temporary joint ventures like partnerships to accomplish their work. These trends will change the way individuals view job security and job loyalty, and the way in which individuals present or "sell" themselves, and, therefore, the kind of education they seek.

During the past decade, foreign trade has become a larger component of the nation's gross domestic product, and California has increased its share of U.S. Trade; see Center for the Continuing Study of the California Economy (1995). California's primary trading partners are expected to grow at a greater rate economically during the next decade than will the rest of the world. The "community" in which Californians interact will increasingly encompass the entire world, not just the local geographic entity in which they live.

Implications. Economic cycles simultaneously increase demand for and reduce funding of community colleges. At the same time, colleges can contribute to long-term economic growth by the appropriate training and education of California's emerging labor force. Changes in the work environment will produce a community college student whose learning needs and attitudes are quite different than those of earlier generations. Increased trade and concern with other countries and cultures will force community colleges to plan curriculum and teach more in global terms.

Economic cycles exert a multiple impact on the colleges: downturns produce declines in real income per capita and accompanying increases in unemployment—both of which, in turn, simultaneously result in less funding, but greater demand for community college education. The recent recession was no exception. And, while the recession was much more severe than the prior three recessions, it appears that recovery has started at nearly the same pace as it did after the prior three recessions. But, a likely economic downturn by 2000 will produce possibly higher-than-usual levels of unemployment due to lower labor force participation; slowed income; and falling revenues for community colleges. A strategy to stabilize revenues across economic cycles and make more flexible the allocation of public resources is needed.

The nation's and California's long-term economic growth will be determined by the quality of its lifestyle and physical infrastructure; competitiveness of its tax and regulatory structure; and availability of skilled labor. However, much of the growth in new jobs will take place in skilled occupations that have not, in the past, typically employed those individuals who will comprise the bulk of the new workforce. Most of that job growth will take place in occupations with skills and knowledge that demand

some postsecondary education and which, therefore, are typically taught by community colleges. Community colleges educate and train for virtually all of the largest growing job categories in California, including retail salespeople, managers, food preparation and service workers, clerks, cashiers, nurses, accountants and auditors, secretaries, engineers, and receptionists; see Center for the Study of the California Economy (1995). And, it is the community college, more than any other postsecondary institution, that enrolls those individuals who will comprise the bulk of the new workforce.

Community colleges are the largest single provider of workforce preparation in California, enrolling one of every eight individuals who are trained in the state each year (Governor's School to Work Task Force, 1995). The more successful community colleges are in training the state's future labor force, the more robust will be future economic growth. Robust economic growth in turn also will ease the need for public investment in welfare, unemployment, and criminal justice, and, presumably, free more funding for postsecondary education. This is true in California, and similar conditions appear to hold across the nation.

The way corporate restructuring changes the labor force is important for the training of students by community colleges. But, these trends also may suggest ways to restructure the colleges. For instance, the emphasis on customer (student) needs, long a hallmark of community college education, should be further centered on student learning. Also important for curriculum planning is the need to put greater emphasis on other cultures and countries as the "global community" with which people deal becomes enlarged.

Society

Apart from demographic and cultural differences, societal trends in California mirror those throughout the nation. Changes in family structure, toward a greater variety of situations—cohabitants, step-parents, etc.—will continue.

Currently, one of every five female adolescents in the United States bears a child before age 20, the highest rate among Western nations; see Carnegie Task Force (1995). Half of these mothers are unmarried. One-fourth of all children are born into poverty, and one-fourth of all children live in single-parent families. And, all these proportions continue to increase, as does the number of children with substandard or no care ("latch-key" children); see, for example, Danziger, et.al. (1994).

Banach and Lorenzo (1994) point out another significant trend: one-fourth of the population lives alone. And there is a general shift to individual- or home-centeredness, and away from community-centeredness, an increasing kind of isolation referred to as "cocooning." This trend is likely to continue, driven by the population's aging, concern for security, and new technologies which make it possible to shop, bank, be entertained, and generally conduct one's business at home.

Societal changes due to technological change will be profound, but somewhat ambiguous. Some observers suggest that the current generation of children will be the first with a greater acquaintance with machines than with animals. While the implications of this aren't clear, students will enter college more conversant with information technologies than ever before.

Like some other states, California's shift to a multicultural society, already underway, will accelerate. This shift leads to what Banach and Lorenzo (1994) describe as the "mosaic society," where diverse minority interests emerge from immigrant-influenced population growth. This society features multiple perspectives where values and learning styles vary. Some cultures value teachers more than others, and the custom for some is to learn collaboratively, while others learn competitively.

Implications: From this rapidly-changing environment emerges a student whose learning needs are quite different than those of students in earlier generations. What will be the same is that these new students not only are seeking skills and knowledge, but also are trying to identify career and life directions, and most doing so while working and supporting families and uncertain about their future.

Community colleges should respond in flexible and rapid ways to these student needs, working as a kind of "one-stop" educational institution where customers with a wide variety of skills may enter programs geared to their needs, ranging from precollegiate to advanced collegiate degree-oriented work.

Students must learn how to acquire, manage and interpret large quantities of information, possessing the requisite basic literacy and computational skills to do so. The curriculum will need to be composed of the proper balance of general and specific skills and knowledge so as to keep pace with social and technological changes. Finally, and most important, colleges must continue those elements of their curricula and services that promote social mobility, civility, and rational discourse in a rapidly changing multicultural environment.

Public Policy

California: Voter initiatives, beginning with Proposition 13 (1978) have constrained California's tax structure and limited the authority of its public bodies, particularly at the local level. And, while California is among the nation's (and the world's) leaders in spending for research and development, the state lags with respect to its public investment in infrastructure and education, and in its private investment in plant and equipment. For the past two decades, California has ranked last among all states in the growth of its public capital stock, which actually declined by over 1 percent per year between 1975 and 1988 (Center for Continuing Study of the California Economy, 1995). Voters continue to oppose local public funding and a number of California counties face extreme fiscal difficulty.

California community colleges are funded under a constitutional amendment (Proposition 98, 1988) which guarantees elementary and secondary schools (K-12) and community colleges a share of the state's General Fund. In good economic times, this is an abundant guarantee, based as it is on growth of Californians' personal income per capita and K-12 enrollments. In bad economic times, the formula is adjusted downward to reflect the slowing in General Fund tax collections.

Business groups have expressed concern about California's declining infrastructure, restrictive regulatory structure, and quality of life. Another key element in the state's economic development, workforce preparation, also is and will be a focus of public attention. A State Job Training Coordinating Council attempts to coordinate the state's 14 providers of workforce preparation to ensure that initiatives are developed within a common policy framework and that educational institutions work closely with business and industry. How this is to be done—who will govern and deliver workforce preparation—isn't clear, though community colleges are the largest single provider at present.

Adding further uncertainty are: (a) plans of the State University to reduce its remedial instruction; (b) University policy to revise its student affirmative action and a constitutional amendment on the same topic for public employment and contracting; (c) public policy that denies education and services to illegal immigrants; and (d) lack of long-term funding for capital outlays.

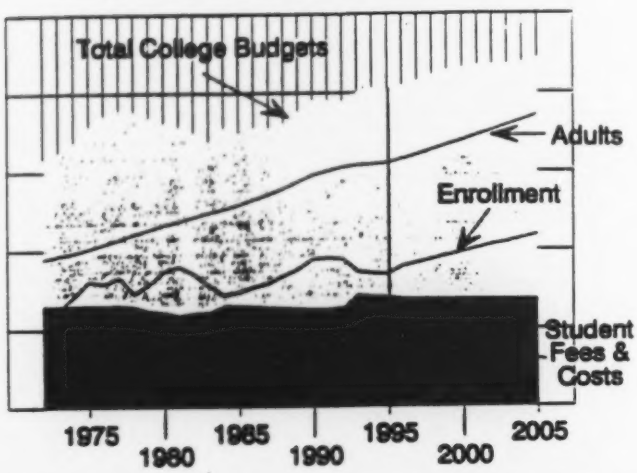
National: Federal judicial opinions are making programs for the disadvantaged less proscriptive. Efforts to deregulate and "privatize" governmental functions are expected to continue, as are efforts to decentralize authority from federal to state government. Long-term efforts to reform and make fiscally solvent federal entitlement programs like social security and healthcare will have somewhat uncertain consequences for education, as will already-inacted federal welfare reform.

States' public policies for health, welfare, criminal justice, and K-12 education will increase their costs substantially, leaving relatively less for postsecondary education. The potential costs of these policies in California led the Rand Corporation (1994) to conclude that it may not be possible to fund the objectives of the California Master Plan for Higher Education by the end of this decade. While more rapid economic growth (than predicted by Rand), and/or changes in policies could produce other results, the long-term prospects for funding of California postsecondary education are problematic.

Implications: Public funding for California community college operations began to increase in 1996 after five years of (price-adjusted) decreases. Our forecasts suggest that community college funding should continue to increase for three to four years. During this time, colleges will be able to add back classes and services cut between 1991 and 1995. Growing operating budgets together with increasing staff retirements should enable community colleges to restructure their curricula and services, but it isn't clear that adequate funding for the use of new technologies will be available. Growth, restructuring and technology all are needed for the colleges to respond to the state's changing culture and demography.

If California's economy cycles as we assume, community college enrollments will likely increase from 1.4 million to at least 1.8 million—an increase of 400,000 students over the next decade (Figure 8). As depicted, this forecast assumes that community college budgets increase—in real (price-adjusted) terms—through 1999, slow, then cycle upwards again by 2005. A fee surcharge for students with baccalaureate degrees ended in 1996, and, despite a drop from $13 to $12 in the enrollment fee per unit, we assume that other student fees and costs increase with the cost-of-living (are stable in real terms) through 2005. For discussion of the methodologies used in these forecasts, see Chancellor's Office (1996) and McIntyre (1995). And, for more up-to-date and more specific projections, see the technical paper on *Future Scenarios*.

Figure 8
California Community College Trends
1972-1995 Actual; 1996-2005 Forecast



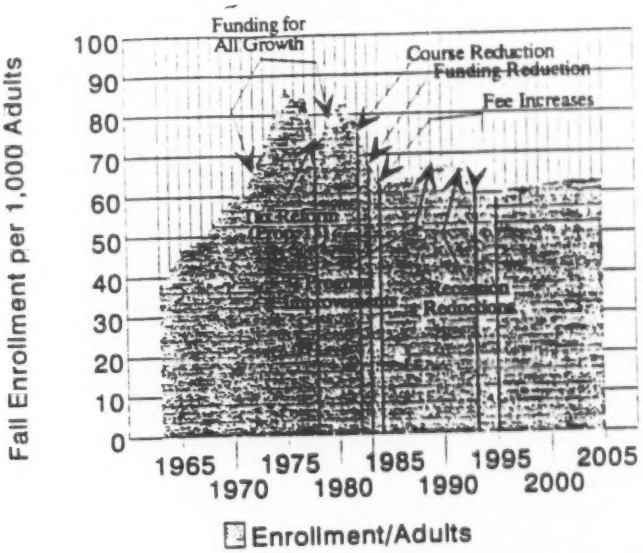
Sources: Chancellor's Office, California Community Colleges, September 1996.

Notes: *Student Costs* include annual real (price-adjusted) student expenditures per FTES for fees, books, and supplies, transportation, and child care. *Total College Budgets* are total annual real current expense of education. *Enrollment*: total community college fall headcount enrollment. *Adults*: California population 18 years of age and over (arithmetic adjustments are made to bring trends to similar scale.)

Since 1981, limited funding for enrollment growth and a series of policy changes have resulted in a series of decreases in community colleges access or "market penetration," measured roughly by: enrollment divided by adult population (Figure 9). Even under the relatively optimistic scenario assumed here, the colleges' access over the next decade does not return to its 1990 level and is far below levels recorded in the late 1970s and early 1980s. A weaker recovery or more pronounced economic downturn

by 2000, or policy changes of the kind experienced since 1981 could substantially alter this scenario, reducing the colleges' ability to accommodate Californians. The need for higher level job skills, beyond secondary education, and characteristics of the emerging labor force both argue for a higher, not lower, market penetration by community colleges in the future. (See also technical paper on *Access*.)

Figure 9
Access and Policy
1963-1995 Actual; 1996-2005 Forecast



Sources: Chancellor's Office, California Community Colleges, September 1996.

Notes: Major policies are depicted as influencing enrollment change. Lesser policies, economic conditions (unemployment), and demographic change also impacted enrollment, but typically to a lesser degree.

Our forecasts suggest that California community colleges will not substantially improve their access or market penetration during the next decade if they continue their current patterns of organization and instructional delivery. New patterns—possibly utilizing greater technology—and/or new funding sources will be needed to measurably improve access.

The needed future balance of community college programs is unclear. Economic conditions and public policy will raise the enrollment demand for vocational education and job training, and emerging demographics will substantially increase the demand for transfer and "core" general education. (Notably, 1996 legislation cites "economic development" as a primary mission of California community colleges, equal to transfer and vocational education.)

Other factors will cause demand to be high across the entire college curriculum. Demography and public policy will continue the demand for ESL education; and social conditions and public policy the demand for precollegiate basic skills. A shift out of one or another of these major community college functions would not appear to serve the emerging educational interests of Californians.

Observers like Cross (1985) and others have long questioned the community colleges' ability to deliver its broad-ranging, comprehensive mission, generally described as: transfer, vocational, developmental, and community education, along with—in some states and locales—economic development. To this menu, as we noted above, Roe (1996) would have the colleges add a specific responsibility for training "techno-professionals" to meet the emerging labor market demand, and Travis (1996) and O'Banion and Gillett-Karam (1996) call for the colleges to expand their community development with a commitment to critical social ills that often occur in the inner city.

Also impacting the colleges' mission are the future consequences of the 1996 federal welfare reform. Recipients on federal aid will be limited to five years of benefits and must be working (including some training) after two years. This likely will increase the pressure to provide short term job training for quick employment rather than longer term education for more stable and long-lasting employment. Grubb (1996) recommends coordinating the two approaches. States like California have developed ways to implement the new law, and early analysis (see, for example, Anderson [1996] and McIntyre and Chan [1996]) indicates that community colleges have a major responsibility—which may grow substantially—to educate and train welfare recipients for jobs.

Another perspective on Californians' current interest in community college education is that it's not usually degree-oriented. Just two of every five students seek a degree or certificate; see Board of Governors (1966). Of every 10 students enrolled last year, four returned this fall while six did not. Of the six who left, one did so with a degree or certificate; while five left without any sort of award. Based on student intentions, one might have expected this leaver ratio of 1 degree:5 nondegrees to be more like 2:4. Among major policy questions are raised by these numbers: (1) Why do so few community college students pursue a degree or certificate? (2) Do existing degrees have value? (3) How many students achieve their goals without a degree or certificate? Besides validating their degrees and certificates, community colleges should (1) more effectively identify student educational objectives and acknowledge their achievement, (2) objectively measure—and use those measures to improve—student performance, and (3) create incentives—for students, faculty, and institutions—to improve student performance.

The relevant trends lead to calls for radical changes in how colleges are organized, managed, and deliver instruction. Cope (1996) calls for fewer administrators in a downsized operation as institutions "lose funds." Alfred and Carter (1996) call for a college organized in "boundaryless" fashion, with streamlined units that stress speed

and teamwork. O'Bannion (1996) visions a "learning college" with many learning options and where teachers and administrators construct student (learning) portfolios and develop teaching technology. West (1996) advocates an institution that partners with, rather than competes with or ignores, other institutions; and where faculty rewards—based on the guild/union model of the industrial age—are replaced by a more flexible, market-based, incentives (merit and competition) model of the information age. Marien (1996) recommends a more balanced curriculum: more general and relevant, less specialized and academic.

Conclusions

These trends and their implications should prove useful in providing a context for community college policy directions. Discussions of trends start at an aggregate level, but more detailed questions and analyses emerge. For instance, discussions of demography and technology lead to analysis of the appropriate community college contribution to the workforce preparation of immigrants. Another line of inquiry, implied by changing technology, is the need to develop plausible projections of how the use of instructional technologies will (should) impact the planning and funding of community college capital outlays.

To summarize, the trends most important to community colleges appear to be:

- *Demographics*: emerging "baby-boomer echo" of 18-24 year-olds; increasing cultural and learning diversity of students; and the elderly education market.
- *Technology*: advances in interactive communications and fused systems; increasing use of computers and the need for higher skills in most jobs; and increasing "virtuality" (decreasing reality?).
- *Economy*: longer and shallower cycles; increased outsourcing, career changes, and networking; and globalization.
- *Society*: advent of multicultural, mosaic society; increased cocooning and living alone; and changing structure of family.
- *Public Policy*: decreasing federal (increasing state) control; continued inadequate funding; and an emerging gap between existing practice and new paradigms of college organization and delivery.

Highlighting this work are (1) the extraordinary degree of *student diversity* the colleges will face, (2) the increasingly pervasive *influence of technology*, (3) continued *expansion in* the perceived *mission* of the colleges, and (4) the substantial *differences* between the current practice and that advocated by planners. Recommendations by these planners often tend to emulate changes taking place in private industry, and community colleges are positioned to embrace some of them. However, few of them have actually been tested in public higher education. Studies of using technology, for example, are ambiguous (Paulien and Associates and NCHEMS, 1996).

A pessimistic future view of community colleges would be that their share of the less-than-baccalaureate postsecondary market decreases substantially because of their inflexible policies, inadequate funding, and more versatile competitors. A more optimistic scenario would have community colleges becoming even more flexible, responsive and relevant to the changing educational needs of students and society, thereby increasing their market share, and becoming even more of a factor in the economic and social development of the United States. The latter scenario, of course, is preferred,

and—as noted above—will only be achieved by substantial changes in college policies and practices. Of course, that is the idea behind the subject of this paper. As Pohl (1996) argues, "The only good reason for trying to predict the future in the first place is so that now, in the present, we can try to shape it ..."

Our work in this project may also suggest a number of general concepts for community college planning and change that, in some cases, tend toward new directions and, in other cases, are being hotly debated. It is this debate that also engenders useful planning and policymaking.

- ***on pedagogy:***

The most popular paradigm shift described in the literature is from a focus on *teaching* to a focus on student *learning*, and, as usually described, favors community colleges whose mission has always been largely student-centered, tailoring instruction and services to diverse student needs.

Research shows that longer-term *education* produces better results than does short-term *job training*; but, federal welfare reform policies will likely force more short-term job training. Colleges need to effectively blend the two approaches.

For effective learning, the process of turning *data* into *information* must be extended by the processes of turning information into *knowledge*; i.e., enabling students to become acquainted with and understanding information. Emerging Information technologies put both information and knowledge literally at the fingertips of students; consequently, students need to learn the *meaning* of that knowledge and how it applies in different contexts and to a variety of problems. Thus, the traditional organization of subject matter and college teaching—by *discipline*—may need to shift toward an emphasis on methods of *solving problems*—increasingly by interdisciplinary approaches.

Colleges may want to pursue more *collaborative* and less *competitive* efforts. This can apply to both students and institutions. Research reviewed for this project shows that students learn more collaboratively than they do competitively. And, our scan suggests also that competition among publicly-funded institutions typically costs more than does collaboration.

- ***on policy and management:***

To ensure an equitable distribution of educational opportunity in the future, colleges may *distribute* or take instruction widely to individuals—in part through technology—a concept that seems to extend beyond just making the campus *accessible* in the traditional sense. Community college and other higher education officials should not defend "*traditions*" if they are no longer *relevant*. An illustration of this may be current ways of certifying student performance.

The continued emphasis on *accountability* must keep the end in sight. *Planning* and decisionmaking rely on evaluation of performance; but, many accountability projects produce long lists of performance indicators without considering how the information is to be used. And, to effectively assess the *value colleges add* to students (the col-

leges' real contribution), *outcome* measurement must control for variation in *inputs* (students' diverse entering skills and preparation).

While necessarily participatory, college "shared" decision processes may encounter difficulty because some of those involved in the consensus-building process are not ultimately *responsible* for it, they are just *consultants*. Most existing *regulations* of college practices have little to do with results and, therefore, do not induce colleges and their students to perform better; *incentives* for better performance are needed.

Colleges should *partner* with private industry to make workforce preparation more effective; but, since colleges produce substantial public or collective benefits, they should not be *privatized*.

The problems facing community colleges call for a *transformation* in the basic ways colleges organize and deliver instruction; an effort that appears to transcend *total quality management*, which, by contrast, has focused on making less important processes more efficient. Finally, the notion of *reinventing* the community college may have the merit of identifying desirable long-term goals, but efforts must begin by identifying major changes needed, then determining ways of *feasibly implementing* those changes.

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